



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/217,401	12/21/1998	KENZO ISHIDA	884.088US1	8371

21186 7590 12/17/2002

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

TRAN, THANH Y

ART UNIT PAPER NUMBER

2841

DATE MAILED: 12/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/217,401

Applicant(s)

ISHIDA ET AL.

Examiner

Thanh Y. Tran

Art Unit

2841

WU

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,9-14 and 17-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-7,9-14 and 17-29 is/are rejected.
- 7) ☒ Claim(s) 1 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 12, 17, and 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US 4,620,761) in view of Daglow et al. (U.S. 4,898,173).

As to claims 1, 4, 17, 20 and 25-26, Smith et al. discloses a mounting socket (see Fig. 9) comprising: a socket body (70) having a first side and a second opposite side, the body (70) having a plurality of vias extending therethrough (72 and 74); and a plurality of conductive terminals (80) within the vias (72 and 74), wherein the terminals (80) are adapted to be elastically compressible and exert a return force when compressed (see Fig. 9, element 80; column 6, lines 23-35), the terminals each positioned in one of the vias comprising a coil (see Fig. 9, col. 5, lines 51-61).

Smith et al. does not teach the terminals comprising a conductive polymer placed around the coil and filling the one via; a conductive polymer is injected within the vias. Daglow et al. teaches a connector assembly (see Fig. 2) wherein the terminal comprising a conductive polymer injected within the vias (see Fig. 2, elements 106, 108; col. 4, lines 9-13). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement the terminals as shown in figure 9 of Smith et al. by adding a conductive polymer material therein as taught by Daglow et al.

Art Unit: 2841

for the purpose of providing an easy mount and retaining flexible terminals between the package and circuit board securely (see col. 1, line 60 - col. 2, line 19).

Moreover, it has been held to be within the general skill of a worker in the art to select a known material, such as a conductive polymer, on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claim 12 recites limitations similar to claim 1, Smith further discloses a plurality of through holes (72, Fig. 9) having straight sides and a constant width formed therein; and a plurality of elastically compressible solderless conductive terminal (80) with lands (88, 82) (see col. 5, lines 57-61); a coil (80) having a constant width. Smith does not teach the terminal comprising a conductive polymer extending completely through and filling the via. The same reasoning applies to claim 12 regarding to the limitation of the terminals comprising a conductive polymer as discussed above in claims 1, 4, 17, 20, and 25-26.

As to claim 21, Smith et al. discloses a mounting socket (see Fig. 9) comprising: a socket body (70) having a first side and a second opposite side, the body (70) having a plurality of vias extending therethrough (72 and 74); and a plurality of conductive terminals (80) within the vias (72 and 74), wherein the terminals (80) are adapted to be elastically compressible and exert a return force when compressed (see Fig. 9, element 80; column 6, lines 23-35), the terminals comprising a coil (see Fig. 9, column 5, line 53, and a circuit board (14) having a plurality of mounting areas, the mounting areas disposed in a plurality of interconnected planes (88) which are substantially non-planar with each other and wherein each terminal is individually compressible to contact its respective mounting area at the plane of the mounting area (see Fig 9, element 88).

Art Unit: 2841

Smith et al. does not teach each comprising a conductive polymer extending entirely through the one via. The same reasoning applies to claim 21 regarding the limitation of the terminals comprising a conductive polymer extending entirely through the one via as discussed above in claims 1, 4 and 20.

As to claim 22, Smith et al. discloses a circuit assembly, comprising: a microprocessor (see column 4, lines 5-13), a substrate having a built-in socket (70) having a plurality of vias (72 and 78) of constant width therethrough, and a plurality of conductive terminals (80), the terminals are adapted to exert a return force when compressed (see Fig. 9, element 80; column 6, lines 23-35), each terminal positioned in one of the vias (see col. 5, lines 51-61) and comprising a coil (see Fig. 9), at least a portion of each terminal disposed within a via; and a motherboard (14) having a plurality of mounting areas (88) thereon, wherein each terminal is compressed to contact a mounting area (see Fig. 9).

Smith et al. does not disclose the terminals comprising a conductive polymer. The same reasoning applies to claim 22 regarding to the limitation of the terminals comprising a conductive polymer as discussed above in claims 1, 4 and 20.

As to claim 23, Smith et al. discloses the terminals (80) are adapted to accommodate for an uneven or warped substrate upon which the mounting socket is disposed (see Fig. 9).

As to claim 24, Smith et al. discloses the terminals (80) are solderless.

3. Claims 5, 7, 9-11, 13-14, 18-19, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US 4,620,761) in view of Daglow et al. (U.S.

Art Unit: 2841

4,898,173) as applied to claims 1 and 4 above, and further in view of Allen et al. (U.S. 4,705,205).

As to claims 5, 7, 13-14, 27 and 29 Smith et al. discloses the instant claimed invention except for: a first and second adhesive layer affixed to the first and second sides of the body.

Allen et al teaches an interconnected device (Fig. 10) comprising a first and second adhesive layer (46) affixed to the first and second sides of the body (40). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the prior art of Smith et al. by having a first and second adhesive layers affixed to the first and second sides of the body as taught by Allen et al for the purpose of engaging the socket between the printed circuit board and the package; and also securing the terminals within the vias at the right positions.

Claims 9-11 recite methods steps similar to the limitations of claims 1, 4-5, 7 and 20. Therefore, they are rejected for the same reasons.

Claims 18-19 recite limitations similar to claims 1, 4-5 and 7. Therefore, they are rejected for the same reason.

4. Claims 6 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (U.S. 4,620,761) and Daglow et al. (U.S. 4,898,173) as applied to claims 1, 4 and 5 above, and further in view of Stopperan (U.S. 5,719,749).

As to claims 6 and 28, Smith et al. discloses the instant claimed invention except for: a polymer tape applied to the first adhesive layer; a ground and power line circuit laid

Art Unit: 2841

on the polymer tape; and a second adhesive layer applied on and protecting the ground and power line circuit.

Stopperan discloses the mounting assembly (see Figs. 2-3) having the first adhesive layer formed by polymer (see column 9, lines 17-19) and a ground (82) and power trace circuit (see column 1, lines 44-46) laid on the polymer tape and the second adhesive layer applied on and protecting the ground and power line circuit (see Figs. 2-3).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement the mounting device of Smith et al.'s by having ground and power traces laid on the polymer tape which is applied to the first adhesive layer as taught by Stopperan for the purpose of protecting the ground and power lines from being electronic shocks.

Response to Arguments

Applicant's arguments with respect to claims 1, 4-7, 9-14, 17-29 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that Smith has no suggestion of a polymer and Daglow has no spring. However, Smith teaches all the instant limitations of the claimed invention, except for the conductive polymer material which is deposited within the vias. Therefore, the conductive polymer of Daglow, as shown in figures 1-2, would be used to modify the prior art of Smith for the purpose of providing an easy mount and retaining flexible terminals between the package and the board securely as discussed above in claims 1, 4, 17, 20, and 25-26.

Art Unit: 2841

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2841

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (703) 305-4757. The examiner can normally be reached on Monday through Thursday and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (703) 308-3121. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'D. Martin', is positioned above the printed name and title.

**DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**

TYT